UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,437	05/16/2000	MANABU OUMI	S004-3848	5091

7590 02/03/2003

BRUCE L ADAMS
ADAMS & WILKS
50 BROADWAY
31ST FLOOR
NEW YORK, NY 10004

EXAMINER	
LE, KIMLIEN T	
ART UNIT	PAPER NUMBER
2653	

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/462,437	Applicant(s) OUMI ET AL.	
	Examiner Kimlien T Le	Art Unit 2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,19-22 and 32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,19-22 and 32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 May 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on November 19, 2002 have been fully considered but they are not deemed to be persuasive.

Applicant asserts on pages 8 and 9:

The present invention overcomes the foregoing drawbacks associated with use of the flying head structure in a near-field recording apparatus. In accordance with amended independent claim 1, the inventive near-field optical head has a slider with a probe provided in a bottom surface thereof. A gap is formed between a recording medium and the bottom surface of the slider. Near-field light is produced or converted into propagation light by the probe and the recording medium and the probe interact through the near-field light when the slider undergoes scanning movement relative to the recording medium to effect recording or reading of information on the recording medium. As further recited by amended independent claim 1, the probe protrudes from the bottom surface of the slider so that a distance between the probe and the recording medium is smaller than a distance between a part of the bottom surface of the slider closest to the recording medium and the recording medium so that the probe can be brought to within several nanometers to several tens of nanometers close to the recording medium to enable high resolution optical reading and/or recording of data on the recording medium.

The Examiner maintains that Knight et al. (U.S. Patent 6, 243, 350) discloses the features of claims 1-3 and 19-22 (Fig. 8a, disclosure of Fig. 28B) and that Knight et al. in view of Koyanagi et al. (U.S. Patent 5,627,815) shows the features of claim 32(Abstract, Fig. 4).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3 and 19-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Knight et al. (U.S. Patent 6, 243, 350).

Regarding claim 1, see Figs. 3, 8a,21, 22, and 28B of Knight et al. which show a near-field optical head, comprising: a slider (310) supported by a suspension arm (2104) providing a load weight and obtaining a floating force due to a relative motion of the slider with respect to a recording medium (302) so that a gap is produced between a bottom surface of the slider and a surface of the recording medium due to a balance between the load weight and the floating force; and a probe (340) provided in the bottom surface of the slider for producing a near-field light or converting a near field light produced on a surface of the recording medium into a propagation light; wherein the recording medium and the probe interact through the near-field light when the slider is caused to undergo scanning movement relative to a surface of the recording medium to thereby effect at least one of the recording of information onto the recording medium and the reproducing of information stored on the recording medium; and wherein the probe protrudes from the bottom surface of the slider toward the recording medium so that a distance between the probe and the recording medium is smaller than a distance

between a part of the bottom surface of the slider closest to the recording medium and the recording medium so that the probe can be brought to within several nanometers to several tens of nanometers close to the recording medium to enable high resolution optical reading and/or recording of data on the recording medium (see disclosure of Figs. 3, 8a, 21, 22 and 28B).

Regarding claim 2, see Figs. 3, 8a, 21, 22 and 28B of Knight et al. which show a near-field optical head according to claim 1; wherein the probe comprises a microscopic aperture formed in the slider for producing a near field light or converting a near-field light produced on a surface of the recording medium into the propagation light (see disclosure of Figs. 3, 8a, 21, 22 and 28B).

Regarding claim 3, see Figs. 3, 8a, 21, 22 and 28B of Knight et al. which show a near-field optical head according to claim 1; wherein the probe comprises a microscopic protrusion extending from the bottom surface of the slider for producing a near field light or converting a near-field light produced on a surface of the recording medium into the propagation light (see disclosure of Figs. 3, 8a, 21, 22 and 28B).

Regarding claim 19, see Figs. 3, 8a, 21, 22 and 28B of Knight et al. which show a near-field optical head comprising: a support member mounted to undergo relative movement with respect to a sample; and a probe protruding from a bottom surface of the support member for producing a near-field light or converting a near-field light produced at a surface of the sample into a propagation light; wherein the sample and the probe interact through the near-field light when the support member undergoes relative movement with respect to the surface of the sample; and wherein a part of the bottom surface of the support member closest to the sample is more distant from the sample than the probe so that the probe can be brought to within several

nanometers to several tens of nanometers close to the sample (see disclosure of Figs. 3, 8a, 21, 22 and 28B).

Regarding claim 20, see Figs. 3, 8a, 21, 22 and 28B of Knight et al. which show a near-field optical head according to claim 19; wherein the support member comprises a slider supported by a suspension arm for providing a load weight and producing a floating force in response to relative motion thereof with respect to the sample so that a gap is formed between the probe and the sample due to a balance between the load weight and the floating force (see disclosure of Figs. 3, 8a, 21, 22 and 28B).

Regarding claim 21, see Figs. 3, 8a, 21, 22 and 28B of Knight et al. which show a near-field optical head according to claim 19 wherein the probe comprises a microscopic aperture formed in the support member for producing a near field light or converting a near-field light produced on a surface of the sample into the propagation light (see disclosure of Figs. 3, 8a, 21, 22 and 28B).

Regarding claim 22, see Figs. 3, 8a, 21, 22 and 28B of Knight et al. which show a near-field optical head according to claim 19 wherein the probe comprises a microscopic protrusion extending from the support member for producing a near field light or converting a near-field light produced on a surface of the recording medium into the propagation light (see disclosure of Figs. 3, 8a, 21, 22 and 28B).

Claim Rejections - 35 USC § 103

3. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knight et al. (U.S. Patent 6, 243, 350) in view of Koyanagi et al. (U.S. Patent 5,627,815).

Regarding claim 32, Knight et al. shows all the features of claim 19, except for a probe that comprises a tapered projection mounted to the support member and has a sharpened tip protruding from the bottom surface of the support member . However, Koyanagi et al. shows a probe that comprises a tapered projection mounted to the support member and has a sharpened tip protruding from the bottom surface of the support member (Abstract, Fig. 4). Therefore, it would have been obvious to provide the slider of Knight et al. with the tapered projection as taught by Koyanagi et al. The rationale is as follows: one of ordinary skill in the art at the time of the invention would have been motivated to provide with the slider of Knight et al with a tapered projection as taught by Koyanagi because the tapered projection will concentrate the light at the desired position.

Conclusion

4. Applicant 's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Point of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimlien Le whose telephone number is 703 305 3498. The examiner can normally be reached on M-F 8a.m-5p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Korzuch William can be reached on 703 305 6137. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9314 for regular communications and 703 872 9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 3900.

Kimlien Le
January 28, 2003

William Korzuch

WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600